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PATENT
Docket No.: C013929/0122995

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Catia BASTIOLI *et al.*)
)
U.S. Patent No.: 6,730,724 ⁶¹) Serial No.: 09/786,189
)
Issued: May 4, 2004) Filed: June 6, 2001

For: **BIODEGRADABLE COMPOSITIONS COMPRISING
STARCH AND POLYSACCHARIDE ESTERS**

Certificate

June 23, 2004

JUL 01 2004

REQUEST FOR CERTIFICATE OF CORRECTION

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The issuance of a Certificate of Correction for the above-identified patent as set forth on the attached PTO-1050 form is requested.

The following error was not attributable to the patentees; accordingly, correction is requested under 37 CFR 1.322:

In claim 1, column 6, line 47, change "can increase and maintain" to --increases and maintains--.

JUL 02 2004

REMARKS

A Certificate of Correction is requested to correct the foregoing errors under 37 CFR 1.322. Support for the request for correction can be found in the Supplemental Response After Final Action Including Amendment, which was sent by facsimile to the Examiner on November 19, 2003 (copy enclosed).

Prompt issuance of the Certificate of Correction is respectfully requested.

Respectfully submitted,

By: Charles M. Avigliano

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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope with sufficient postage addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on June 23, 2004
(Date of Deposit) Charles M. Avigliano
Name of applicant, assignee, or Registered Representative <u>Charles M. Avigliano</u>
Signature 6/23/2004
Date of Signature

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,730,724 *B1*
DATED : May 4, 2004
INVENTOR(S) : Catia BASTIOLI, et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In claim 1, column 6, line 47, change "can increase and maintain" to --increases and maintains--

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PATENT NO. 6,730,724 *B1*

JUL 02 2004



PATENT
Docket No.: C013929/0122995

**REPLY UNDER
37 CFR § 1.116**

EXPEDITED PROCEDURE

TECHNOLOGY CENTER 1700

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Catia BASTIOLI *et al.*)
Serial No.: 09/786,189) Examiner: K. Umakant Rajguru
Filed: June 6, 2001) Art Unit: 1711
For: **BIODEGRADABLE COMPOSITIONS**)
COMPRISING STARCH AND)
POLYSACCHARIDE ESTERS)

November 19, 2003

SUPPLEMENTAL RESPONSE AFTER FINAL ACTION
INCLUDING AMENDMENT

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

The Final Office Action mailed May 9, 2003 was fully responded to in our Response To Final Action filed August 11, 2003. In addition to our Response, a Notice of Appeal was also filed concurrently therewith. This Supplemental Response After Final Action Including Amendment is in response to the telephonic interview conducted with the Examiner on

October 23, 2003 and November 19, 2003. No fee is believed to be due for this Supplemental Response After Final Action Including Amendment. If it is determined that a fee is due, please charge such fee to Deposit Account No. 02-4467.

AMENDMENTS TO THE CLAIMS: begin on page 3 of this paper.

REMARKS begin on page 7 of this paper.

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

Claim 1. (Currently Amended) Biodegradable heterophase compositions with increased biodegradability comprising (1) partially or completely destructured and/or complexed starch, (2) a polysaccharide ester, and (3) a plasticizer for the polysaccharide ester, in which the polysaccharide ester constitutes the matrix and the starch the dispersed phase,

characterized in that the compositions comprise starch and plasticized polysaccharide ester in a ratio by weight of from 1:0.6 to 1:18, the polysaccharide ester is plasticized with a plasticizer in a quantity of from 10 to 40% by weight referred to the polysaccharide ester and the starch is in the form of particles or domains of average numeral dimension lower than 1 μm for at least 80% of the particles,

the biodegradable heterophase compositions further comprising an additive which ~~can~~ increases ~~increase~~ and maintains ~~maintain~~ a pH of 4 or more for a solution obtained by placing the compositions in pellet or particle form in contact with water at ambient temperature for 1 hour with the use of a pellet/particles:water ratio of 1:10 by weight.

Claim 2. (Previously presented) Biodegradable compositions according to Claim 1, in which the polysaccharide ester is a cellulose ester or a starch ester.

Claim 3. (Previously presented) Biodegradable compositions according to claim 1, in which the particles or domains of the dispersed phase have dimension lower than 0.5 μm .

Claim 4. (Previously presented) Biodegradable compositions according to claim 1, in which the pH regulating additive is selected from carbonates and hydroxides of alkaline-earth metals.

Claim 5. (Original) Biodegradable compositions according to claim 4, in which the pH regulating additive is selected from calcium and magnesium carbonates.

Claim 6. (Previously presented) Biodegradable compositions according to claim 1, in which the polysaccharide ester is a cellulose acetate with a degree of substitution of from 1.5 to 2.5.

Claim 7. (Previously presented) Biodegradable compositions according to claim 1, in which the pH regulating additive is present in a quantity of from 0.5 to 30% by weight relative to the weight of the starch and of the plasticised cellulose ester.

Claim 8. (Original) Biodegradable compositions according to claim 7, in which the pH regulating additive is present in a quantity of from 5 to 20%.

Claim 9. (Previously presented) Biodegradable compositions according to claim 1, comprising a further polymeric additive selected from the group consisting of:

- polymers or copolymers compatible with the polysaccharide ester, grafted with aliphatic or polyhydroxylated chains containing from 4 to 40 carbon atoms,
- copolymers obtained from hydroxy-acids and diamines with 2-24 carbon atoms, aliphatic polyesters, polyamides, polyureas and polyalkylene glycols with aliphatic or aromatic diisocyanates,
- copolymers produced from polymers compatible with the polysaccharide esters by grafting polyols soluble in starch.

Claim 10. (Original) Biodegradable compositions according to claim 9, in which said further polymeric additive is used in a quantity of from 0.1 to 20% by weight relative to the weight of the starch and of the plasticised cellulose ester.

Claim 11. (Previously presented) Biodegradable compositions according to claim 1, in which the further polymeric additive is selected from the group consisting of a polymer or copolymer compatible with the cellulose ester grafted with a fatty acid selected from oleic, lauric, palmitic, stearic, erucic, linoleic, and ricinoleic acids and a block copolymer between polycaprolactone and an aliphatic or aromatic diisocyanate.

Claim 12. (Previously presented) Biodegradable compositions according to claim 1 comprising a plasticizer for the starch phase, used in a quantity of from 0.5 to 50% relative to the weight of the starch.

Claim 13. (Previously presented) Biodegradable compositions according to claim 1, in which the ratio of plasticised cellulose-ester:starch is between 2:1 and 3:1 by weight.

Claim 14. (Previously presented) Manufactured articles produced from the compositions of claim 1.

Claim 15. (Currently Amended) Manufactured articles according to claim 14, suitable for the production of foams, foamed extruded containers, foamed extruded sheets, and moulded foams.

Claim 16. (Cancelled)

Claim 17. (Currently amended) A method for increasing the biodegradability of articles produced from biodegradable heterophase compositions comprising partially or completely destructured and/or complexed starch, a polysaccharide ester and a plasticizer for the polysaccharide ester, in which the polysaccharide ester constitutes the matrix and the starch the dispersed phase, in form of particles or domains having an average numeral size lower than 1 μm for at least 80% of the particles, comprising adding to said composition an additive which increases and maintains a pH of 4 or more for ~~can increase and maintain at values of 4 or more~~

the pH of a solution obtained by placing the compositions in pellet or particle form in contact with water at ambient temperature for 1 hour with a pellet (or particle)/water ratio of 1:10 by weight.

REMARKS

The Examiner is thanked for the courtesies extended during the telephonic interview conducted on October 23, 2003 and on November 19, 2003 with the undersigned. In both interviews, the Examiner acknowledged that the compositions of the present invention have increased biodegradability. Claim 1 has been amended to note in the preamble that the claim is directed to compositions with "increased biodegradability" and which contain "an additive which increases and maintains a pH of 4 or more for a solution." Also, claim 17 has also been amended to recite "an additive which increases and maintains a pH of 4 or more for a solution." Support for these amendments is found in the specification at, for example, page 2, lines 1-6 and lines 10-21 and in original claims 1 and 17. *See In re Gardner*, 177 USPQ 396, 397 (CCPA 1973) and MPEP §§ 608.01(o) and (l). Further, in order to correct a grammatical error and for the sake of clarity, claim 15 has also been amended to include the conjunction "and." This amendment is formal in nature and does not narrow the scope of the claims in any manner.

In view of the foregoing, favorable action on the merits, including withdrawal of the rejection, and allowance of all the claims, is respectfully requested. If the Examiner has any questions regarding this paper, please contact one of the undersigned attorneys.

I hereby certify that this correspondence is being sent to the United States Postal Service as by facsimile to fax number (703) 872-9711 on November 19, 2003.

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Respectfully submitted,

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